



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/580,921

04/02/2007

Francois M. Casati

62475A

9237

109 7590 05/11/2009

The Dow Chemical Company
Intellectual Property Section
P.O. Box 1967
Midland, MI 48641-1967

EXAMINER

WINKLER, MELISSA A

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

05/11/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,921	Applicant(s) CASATI ET AL.	
	Examiner MELISSA WINKLER	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on February 12, 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 14-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 14-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,977,284 to Reich et al.

Regarding Claim 1. Reich et al. teach a process for preparing a urethane(meth)acrylate product (Column 1, Lines 51 - 53). The inventive product is prepared by the reaction of polyether(meth)acrylates with primary or secondary amino compounds, such as 1-(3-aminopropyl)imidazole, to form a Michael adduct (Column 2, Line 65 – Column 3, Line 33). This adduct is subsequently reacted with a polyisocyanate to form the urethane(meth)acrylate product (Column 3, Lines 48 – 55).

Regarding Claim 14. Reich et al. teach the process of Claim 1 wherein the isocyanate used may be a toluene diisocyanate (Column 3, Line 64 – Column 4, Line 10).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,845,133 to Priester et al. in view of US 5,977,284 to Reich et al.

Regarding Claim 1. Priester et al. teach a process for the production of polyurethane foam by reacting an isocyanate-reactive component and a polyisocyanate in the presence of a blowing agent (Column 2, Line 60 – 67). The isocyanate-reactive component comprises an amine-terminated compound (Column 3, Line 51 – Column 5, Line 5).

Priester et al. do not expressly teach the amine-terminated compound is prepared via the claimed reaction. However, Reich et al. teach a process for preparing a urethane(meth)acrylate product (Column 1, Lines 51 - 53). The inventive product is prepared by the reaction of polyether(meth)acrylates with primary or secondary amino compounds, such as 1-(3-aminopropyl)imidazole, to form a Michael adduct (Column 2, Line 65 – Column 3, Line 33). This adduct is subsequently reacted with a

polyisocyanate to form the urethane(meth)acrylate product (Column 3, Lines 48 – 55).

Priester et al. and Reich et al. are analogous art as they are from the same field of endeavor, namely methods of making urethanes. At the time of invention, it would have been obvious to a person of ordinary skill in the art to cap the compounds taught by Priester et al. with a tertiary amine using the method taught by Reich et al. The motivation would have been that the amine-terminated compounds taught by Reich et al. provide advantages such as very high reactivity upon radiation curing and low viscosity (Column 1, Lines 52 – 54).

Regarding Claim 2. Priester et al. teach the process of Claim 1 wherein the polyol component may comprise a mixture of the amine-terminated compound with other polyols (Column 6, Lines 15 – 17). In Samples 5 and 6 of Example 2, the polyol (Polyol B) used in conjunction with the amine-terminated polyol is a 1650 equivalent weight, trifunctional poly(propylene oxide). Its hydroxyl number, calculated from its equivalent weight, is roughly 34. Polyol B is used in an amount of 60 parts per 40 parts amine-terminated polyol in Sample 5 and in an amount of 40 parts per 60 parts amine-terminated polyol in Sample 6.

Regarding Claim 14. Priester et al. teach the process of Claim 1 wherein the isocyanate used may be a toluene diisocyanate (Column 6, Lines 51 - 52).

Regarding Claim 16. Priester et al. teach the process of Claim 1 wherein the foam is prepared using an isocyanate index in the range of 95 to 110 (Column 7, Lines 24 – 38).

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,845,133 to Priester et al. in view of US 5,977,284 to Reich et al., as applied to Claim 1 above, and further in view of US 4,517,313 to Nakatani.

Regarding Claim 15. Priester et al. teach the process of Claim 1 but do not expressly teach preparing the foam with an integral skin. However, Nakatani also teaches a method of making a polyurethane foam which may be prepared with an integral skin. In this method, a polyurethane resin solution is coated inside of a mold to provide a skin. Then, the polyurethane foaming mixture is charged in the mold. The skin is transferred to the foam at the time of demolding (Column 4, Lines 56 - 68). Priester et al. and Nakatani are analogous art as they are from the same field of endeavor, namely polyurethane foams. At the time of invention, it would have been obvious to a person of ordinary skill in the art to prepare the foam taught by Priester et al. as an integral skin polyurethane foam. The motivation would have been that preparing the foam taught by Priester et al. as an integral skin foam would diversify its potential applications to areas such as interior trim and shoe soles.

Claims 3 - 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,845,133 to Priester et al. in view of US 5,977,284 to Reich et al.

Regarding Claim 3. Priester et al. teach a process for the production of polyurethane foam by reacting an isocyanate-reactive component and a polyisocyanate in the presence of a blowing agent (Column 2, Line 60 – 67).

Priester et al. teach the isocyanate-reactive component may comprise a mixture of an amine-terminated compound with other polyols (Column 6, Lines 15 – 17). In Samples 5 and 6 of Example 2, the polyol (Polyol B) used in conjunction with the amine-terminated polyol is a 1650 equivalent weight, trifunctional poly(propylene oxide). Its hydroxyl number, calculated from its equivalent weight, is roughly 34. Polyol B is used in an amount of 60 parts per 40 parts amine-terminated polyol in Sample 5 and in an amount of 40 parts per 60 parts amine-terminated polyol in Sample 6.

Priester et al. do not expressly teach the amine-terminated compound is prepared via the claimed reaction. However, Reich et al. teach a process for preparing a urethane(meth)acrylate product (Column 1, Lines 51 - 53). The inventive product is prepared by the reaction of polyether(meth)acrylates with primary or secondary amino compounds, such as 1-(3-aminopropyl)imidazole, to form a Michael adduct (Column 2, Line 65 – Column 3, Line 33). This adduct is subsequently reacted with a polyisocyanate to form the urethane(meth)acrylate product (Column 3, Lines 48 – 55).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to cap the compounds taught by Priester et al. with a tertiary amine using the method taught by Reich et al. The motivation would have been that the amine-terminated compounds taught by Reich et al. provide advantages such as very high reactivity upon radiation curing and low viscosity (Column 1, Lines 52 – 54).

Regarding Claim 4. Priester et al. teach the process of Claim 3 wherein water is used as the blowing agent in an amount in the range of about 0.5 to about 10 parts per 100 parts amine-terminated compound (Column 7, Line 61 – Column 8, Line 9).

Regarding Claim 5. Priester et al. teach the process of Claim 5 wherein the blowing agent composition may comprise carbon dioxide (Column 7, Lines 39 – 46).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,845,133 to Priester et al. in view of US 5,977,284 to Reich et al., as applied to Claim 3 above, and further in view of US 2002/009338 to Haas et al.

Regarding Claim 6. Priester et al. teach the process of Claim 4 but does not expressly teach the blowing agent comprises carboxylic acid. However, Haas et al. teach a polyurethane foam which may be prepared with blowing agents such as carboxylic acids, preferably in combination with water (Paragraph 44). Priester et al. and Haas et al. are analogous art as they are from the same field of endeavor, namely

polyurethane foams. At the time of invention, it would have been obvious to a person of ordinary skill in the art to replace the halocarbon blowing agents used in conjunction with water taught by Priester et al. with carboxylic acid. The motivation would have been that carboxylic acid blowing agents provide advantages such as that they are viable alternatives to halocarbon blowing agents while avoiding the environmental damage associated with halocarbon blowing agents.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,845,133 to Priester et al. in view of US 5,977,284 to Reich et al.

Regarding Claim 17. Priester et al. teach an isocyanate-reactive component/polyol blend comprising a mixture of an amine-terminated compound with other polyols (Column 6, Lines 15 – 17). In Samples 5 and 6 of Example 2, the polyol (Polyol B) used in conjunction with the amine-terminated polyol is a 1650 equivalent weight, trifunctional poly(propylene oxide). Its hydroxyl number, calculated from its equivalent weight, is roughly 34. Polyol B is used in an amount of 60 parts per 40 parts amine-terminated polyol in Sample 5 and in an amount of 40 parts per 60 parts amine-terminated polyol in Sample 6.

Priester et al. do not expressly teach the amine-terminated compound is prepared via the claimed reaction. However, Reich et al. teach a process for preparing a

urethane(meth)acrylate product (Column 1, Lines 51 - 53). The inventive product is prepared by the reaction of polyether(meth)acrylates with primary or secondary amino compounds, such as 1-(3-aminopropyl)imidazole, to form a Michael adduct (Column 2, Line 65 – Column 3, Line 33). This adduct is subsequently reacted with a polyisocyanate to form the urethane(meth)acrylate product (Column 3, Lines 48 – 55). At the time of invention, it would have been obvious to a person of ordinary skill in the art to cap the compounds taught by Priester et al. with a tertiary amine using the method taught by Reich et al. The motivation would have been that the amine-terminated compounds taught by Reich et al. provide advantages such as very high reactivity upon radiation curing and low viscosity (Column 1, Lines 52 – 54).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated

by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1 – 3 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claim 1 of copending Application No. 10/589,516 in view of US 5,977,284 to Reich et al. Although the claims are not identical, they are obvious variations upon each other.

This is a provisional obviousness-type double patenting rejection.

Regarding Claims 1 - 3. Instant Claims 1 - 3 correspond to Claim 1 of Application No. 10/589,516. Although Application No. 10/589,516 does not expressly teach the autocatalytic polyol has a tertiary amine group prepared via the claimed reaction, this limitation is taught by Reich et al. (Column 2, Line 65 – Column 3, Line 55). At the time of invention, it would have been obvious to a person of ordinary skill in the art to end-cap the polyol in Application No. 10/589,516 with the tertiary amine group. The motivation would have been that the amine-terminated compounds provide advantages such as very high reactivity upon radiation curing and low viscosity (Reich et al.: Column 1, Lines 52 – 54).

Claims 1 – 3 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claim 1 of copending Application No. 11/665,409 in view of US 5,977,284 to Reich et al. Although the claims are not identical, they are obvious variations upon each other.

This is a provisional obviousness-type double patenting rejection.

Regarding Claims 1 - 3. Instant Claims 1 - 3 correspond to Claim 1 of Application No. 11/665,409. Although Application No. 11/665,409 does not expressly teach the autocatalytic polyol has a tertiary amine group prepared via the claimed reaction, this limitation is taught by Reich et al. (Column 2, Line 65 – Column 3, Line

55). At the time of invention, it would have been obvious to a person of ordinary skill in the art to end-cap the polyol in Application No. 11/665,409 with the tertiary amine group. The motivation would have been that the amine-terminated compounds provide advantages such as very high reactivity upon radiation curing and low viscosity (Reich et al.: Column 1, Lines 52 – 54).

Response to Arguments

Applicant's arguments with respect to Claims 1 – 6 and 14 - 17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELISSA WINKLER whose telephone number is (571)270-3305. The examiner can normally be reached on Monday - Friday 7:30AM - 5PM E.S.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/
Supervisory Patent Examiner, Art Unit 1796

MW
May 8, 2009